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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,055	03/15/2001	Soo Young Lee	LEES3001/EM/6595	3237

7590 09/20/2004

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EXAMINER

LAO, LUN S

ART UNIT PAPER NUMBER

2643

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/808,055	LEE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Lun-See Lao	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-7 is/are allowed.
- 6) ☒ Claim(s) 1 and 4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Introduction***

1. Claims 1-7 of U.S. Application 09/808,055 filed on 03-15-2001 are presented for examination.

### ***Drawings***

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Clough et al. (US PAT. 4,672,674).

Consider claim 1, Clough teaches a method for active noise cancellation using independent component analysis which is characterized by adaptation of a filter (see fig.1, 11) to get components among signal components of the primary input (1) which are independent of noise components which form the secondary input (2) at the output end in active noise cancellation system (7), wherein the mixture (12) of signal and noise that forms the primary input and noise that forms the secondary input (see col.3 line 7-57).

Consider claim 2, Clough teaches the method for active noise cancellation using independent component of the signal cancellation range corresponding to active noise is extended for the system. which acquires many noise signals or mixtures of signal and noise by increasing the number of inputs or outputs of the said active noise cancellation system (see col.3 line 7-57).

5. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Jackson et al. (US PAT. 6,151,397).

Consider claim 1, Jackson teaches a method for active noise cancellation using independent component analysis which is characterized by adaptation of a filter (see fig.8, 742,743) to get components among signal components of the primary input (X1) which are independent of noise components which form the secondary input (X2) at the output end in active noise cancellation system, wherein the mixture (744,755) of signal and noise that forms the primary input and noise that forms the secondary input (see col.10 line 7-64).

Consider claim 2, Jackson teaches the method for active noise cancellation using independent component of the signal cancellation range corresponding to active noise is extended for the system. which acquires many noise signals or mixtures of signal and noise by increasing the number of inputs (see col.10 line 25- col.11 line 14) or outputs of the said active noise cancellation system (see col.11 line 15-col.12 line 18).

Consider claim 3 Jackson teaches the method for active noise cancellation using independent component analysis which is characterized by canceling active noise by including the following steps or an arbitrary step;

in a cancellation method of active noise cancellation system with a feedback structure (see fig.8),

(a) wherein zero delay coefficient,  $W_{ii}(0)$ , scales the data to maximize the information transmitted through the nonlinear function (see col.11 line 45-col.12 line 18),

(b) wherein delay coefficient,  $W_{ii}(k)$ ,  $k \neq 0$ , whitens each output from the corresponding input signal temporally (see col.10 line 7-col.11 line 65), and

(c) wherein coefficient in a feedback cross filter,  $W_{ij}(k)$ ,  $i \neq j$ , decorrelates each output

$$\Phi(u_i(t)) = - \frac{\frac{\partial P(u_i(t))}{\partial U_i(t)}}{P(u_i(t))}$$

from all other recovered signal  $u_i(t)$ , where the said  $P(u_i(t))$  approximates the probability density function of estimated source signal  $u_i(t)$  (see col.8 line 16-col.10 line 6).

Consider claim 4, Jackson teaches the method for active noise cancellation using independent component of the signal cancellation range corresponding to active noise is extended for the system. which acquires many noise signals or mixtures of signal and noise by increasing the number of inputs (see col.10 line 25- col.11 line 14) or outputs of the said active noise cancellation system (see col.11 line 15-col.12 line 18).

***Allowable Subject Matter***

6. Claims 5-7 are allowed.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Handel (US PAT 6,430,295); Ikeda (US PAT 6,266,422); Torkkola (US PAT. 5,675,659) and Ohkubo (US PAT 5,243,661) are recited to show other related the method.for active noise cancellation using independent component analysis.

8. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (703) 305-2259 The examiner

Art Unit: 2643


can normally be reached on Monday-Friday from 8:00 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz, can be reached on (703) 305-4708.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (703) 306-0377.

Lao, Lun-See  
Patent Examiner  
US Patent and Trademark Office  
Crystal Park 2  
(703) 305-2259

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**DUC NGUYEN**  
**PRIMARY EXAMINER**